



**Argonne**  
NATIONAL  
LABORATORY

*... for a brighter future*



U.S. Department  
of Energy

UChicago ►  
Argonne<sub>LLC</sub>

A U.S. Department of Energy laboratory  
managed by UChicago Argonne, LLC

***Predicted Impact of Idling Reduction  
Options for Heavy-Duty Diesel Trucks:  
A Comparison of Full-Fuel-Cycle Emissions, Energy Use,  
and Proximity to Urban Populations in Five States***

***August 15, 2007***

***Poster P-26***

***Linda Gaines and C.J. Brodrick  
Center for Transportation Research  
Argonne National Laboratory***

***With A. Albrecht  
James Madison University***

## *PM<sub>10</sub> emissions vary by state and technology*

- All idling-reduction options reduce full fuel-cycle emissions vs. idling
- Highest emissions in states with highest cooling loads
- Electrified parking space PM<sub>10</sub> high because of grid reliance on coal
  - Urban component low
- APU options have high urban component

### KEY:

APU= Auxiliary power unit  
 DPF= Diesel particulate filter  
 DFH= Direct-fired heater  
 BEC= Battery-electric cooling  
 AC= Air conditioning  
 EPS= Electrified parking space

